

WHAT IS CLAIMED IS:

An electromechanical system for testing IC-chips; said system being comprised of:

5 a total of N chip holding subassemblies, where N is an integer greater than one and where each chip holding subassembly has sockets for holding a group of IC-modules that include said IC-chips;

10 a moving means for automatically moving the i-th one of said N chip holding subassemblies from a load position in said system to a test position in said system, and visa-versa, where i changes with time in a sequence;

a power supply means which sends electrical power only to those IC-modules that are held by said chip holding subassemblies at said test position; and,

15 a temperature control means which contacts only those IC-modules that are held by said chip holding subassemblies at said test position.

2. A system according to claim 1 wherein said moving means moves said i-th chip holding subassembly from said load position to said test position, and visa-versa, while at least half of said N chip holding subassemblies are at said test position.

3. A system according to claim 2 wherein said sequence in which said moving means moves said i-th chip holding subassembly in a repetitive sequence.

4. A system according to claim 2 wherein said sequence in which said moving means moves said i-th chip holding subassembly in a random sequence.

5. A system according to claim 1 which further includes a signal generator means which sends test signals concurrently to said IC-chips on all chip holding subassemblies that are at said test position.

6. A system according to claim 5 wherein said signal generator means sends said test signals to said IC-chips such that said test signals are shifted in time from one chip holding subassembly to another at said test position.

7. A system according to claim 5 wherein said signal generator means begins to send said test signals to said IC-chips that are on the i-th chip holding subassembly, between the time that subassembly is moved to said test position and the time that the next chip holding subassembly in said sequence is moved to said test position.

8. A system according to claim 5 wherein said signal generator means includes N digital state machines, one on each of said N chip holding subassemblies, and a master controller which is stationary and is coupled via a communication channel to each of said N digital state machines.

9. A system according to claim 5 wherein said signal generator means sends test signals which place said IC-chips in a predetermined state but do not functionally test said IC-chips.

10. A system according to claim 5 wherein said signal generator means sends test signals which functionally test said IC-chips.

11. A system according to claim 1 wherein said moving means moves each of said chip holding subassemblies from said load position to said test position in a horizontal plane, and said temperature control means moves vertically in alignment with said test position.

12. A system according to claim 1 which further includes a chip handler means, which is time-shared by all of said chip holding subassemblies, for moving said IC-modules from one source container into the sockets on said i-th chip holding subassembly at said load position, and from those sockets to at least one pass container and one fail container.

13. A system according to claim 1 wherein each chip holding subassembly is manually removable from said system at said load position, and manually reinsertable to said system at said load position.

14. A system according to claim 1 wherein the total number of chip holding subassemblies which are held by said frame is from two to twenty.